

REMARKS

Reconsideration and withdrawal of the rejection and the allowance of all claims now pending in the above-identified patent application (*i.e.*, Claims 4-6) are respectfully requested in view of the foregoing amendments and the following remarks.

At the outset, it should be recognized that the present invention provides a method for transmitting frequency modulated data signals (having a frequency band) over a digital telephone network that filters the frequency modulated data signals transmitted. The claimed method includes the steps of, first, generating a pseudo random sequence having a frequency band that does not overlap the frequency band of the frequency modulated data signals, then mixing the pseudo random sequence generated with the frequency modulated data signals for producing frequency modulated data signals having more than one frequency, which, preferably, may be modulated with respect to their amplitude. It is further preferred that the frequencies of the frequency band of the pseudo random sequence be lower than the frequencies of the frequency modulated data signals, as depicted in FIG. 1.

In the first Office Action, the Examiner has rejected original Claims 1-3 (now substituted by new Claims 4-6) as being non-enabled by Applicants' originally-filed Specification, pursuant to 35 U.S.C. §112, first paragraph. The Exami-

ner has initially stated that the definition of "ECG" was not included in the Specification as a basis for the non-enablement rejection. Applicants have accordingly amended their disclosure at Page 1, line 8, to recite that the abbreviation "ECG" is intended to stand for either "electrocardiograph" or "electrocardiogram." This abbreviation is recognized by those skilled in the art, as evidenced *Chambers Science and Technology Dictionary* (W & R Chambers Ltd., 1991 Edition) at pp. 282 and 291 (enclosed), as well as, e.g., Lewis, U.S. Patent No. 3,986,498, entitled "Remote ECG Monitoring System"; Malchman et al., U.S. Patent No. 3,872,252 (Col. 1, lines 29-32: "A second aspect of the invention relates to monitor apparatus capable of transmitting, from a remote location to a receiving location, an electrocardiogram (ECG)."); and Begun et al., U.S. Patent No. 5,474,090 (Abstract, lines 6-10: "The system includes a patient station which in the case of cardiac rehabilitation includes an ECG monitor and a transmitting unit for transmitting ECG data and patient speech signals over a voice grade phone line.") Thus, Applicants respectfully contend that the meaning of "ECG" is understood by the skilled artisan and the amendment entered to clarify this term is submitted to be proper.

Applicants have further amended their Specification, at Page 2, immediately beneath the heading "BEST MODE OF CARRYING OUT THE INVENTION," to clarify the essential elements of their new main claim (i.e., Claim 4), including the meanings

of what is intended by "more than one frequency" and the step of "mixing the sequence with the original data frequency modulated signals" (originally recited in Claim 1), which has since been clarified by substituting new independent Claim 4 for prior Claim 1, which now recites the mixing step as "mixing the pseudo random sequence generated in said generating step with the frequency modulated data signals for producing frequency modulated data signals having more than one frequency."

The Specification, as originally drafted in accordance with Australian practice and first filed under the P.C.T., was intended to comply with the disclosure requirements of numerous countries, and it is for this reason that various portions of the disclosure and the originally-filed claims closely tracked one another. The near identity between the disclosure and the original claims is submitted to be an issue of form, rather than substance, and should not be viewed, in and of itself, as a failure on Applicants' part to properly provide an enabling disclosure (as directed to those of ordinary skill in the relevant art) of their invention.

By the present Response, and noted above, Applicants have cancelled prior Claims 1-3 and have substituted therefor new Claims 4-6, which clarify that the use of "FM" was intended to mean "frequency modulated," and to provide

clearer antecedents for all claim features and method steps in accordance with U.S. practice, as well as providing overall improved clarity.

In light of the foregoing, it is respectfully contended that the Examiner's 35 U.S.C. §112, first paragraph, lack of enablement rejection of Applicants' claims has been overcome and should appropriately be withdrawn.

The Examiner also issued an objection to the drawing figures, pursuant to 37 C.F.R. §1.83(a), which is addressed in detail at Pages 2 - 3 of this Response. It is respectfully that the drawing objection should be withdrawn for the reasons earlier stated and in light of the newly-entered set of claims.

In view of the foregoing, it is respectfully contended that all claims now pending in the above-identified patent application (i.e., Claims 4-6) a novel and efficient method for transmitting frequency modulated data signals over a digital telephone network, which is patentably distinguishable over the prior art. Accordingly, withdrawal of the outstanding objection and rejection and the allowance of

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**eave-board** (*Build.*). See **tilting fillet**.

**eave-lead** (*Build.*). A lead gutter behind a parapet, around the edge of a roof.

**eaves course** (*Build.*). See **doubling course**.

**eaves fascia** (*Build.*). See **fascia** (2).

**eaves gutter** (*Build.*). A trough fixed beneath an eave to catch and carry away the rain flow from the roof. Also called **shuting**.

**eaves plate** (*Build.*). A beam carried on piers or posts and supporting the feet of roof rafters in cases where there is no wall beneath.

**eaves soffit** (*Build.*). The horizontal surface beneath a projecting eave.

**ébauche** (*Metall.*). A partly finished watch movement, consisting of the dial plate, bridges and balance cock.

**EBDIC** (*Comp.*). See **character code**.

**E-bend** (*Telecomm.*). A smooth bend in the axis direction of a waveguide, the axis being maintained in a plane parallel to the polarization direction.

**Eberhard effect** (*Image Tech.*). Border effect in the developing of a heavy photographic image, showing higher density at the edges than in the centre.

**EBM** (*Acron. Eng.*). Abbrev. for **Electron Beam Machining**.

**EBNA** (*Immun.*). **Epstein-Barr virus Nuclear Antigen**. Antigen detected in the nuclei of B-cells and tumour cells in conditions associated with infection by the Epstein Barr virus, such as **infectious mononucleosis**, **Burkitt's lymphoma** and **nasopharyngeal carcinoma**.

**ebola disease** (*Med.*). A severe and often fatal viral disease causing one form of African haemorrhagic fever. The other is caused by the **Morburg virus** which is closely related.

**ebonite** (*Chem.*). A hard insulating material of rubber which has been vulcanized, i.e. the latex molecules have been cross-linked through sulphur atoms.

**ebony** (*For.*). Heavy hardwood from a tree of the genus **Diospyros**, a native of W. Africa, India and S.E. Asia. It is naturally resistant to most diseases and insects. Typical uses are for making brush backs, piano keys etc.

**ebony Sindanyo** (*Elec. Eng.*). See **Sindanyo**.

**EBR** (*Image Tech.*). **Electron Beam Recording**, a system for transferring a video picture to photographic motion picture film, the scanning modulated beam exposing the film frame in a vacuum enclosure.

**EBU** (*Genl.*). Abbrev. for **European Broadcasting Union**.

**ebullator** (*Phys.*). A heated surface used to impart heat to a fluid in contact.

**ebullimeter** (*Phys.*). A device which enables the true boiling point of a solution to be determined.

**ebullioscopy** (*Chem.*). The determination of the molecular weight of a substance by observing the elevation of the boiling-point of a suitable solvent.

**ebullition** (*Phys.*). See **boiling**.

**eburnation** (*Med.*). Ivorylike hardening of bone which occurs at the joint surfaces in osteoarthritis.

**EBW** (*Acron. Eng.*). Abbrev. for **Electron Beam Welding**.

**ECAC** (*Acron.*). Abbrev. for **European Civil Aviation Conference**.

**eccentric load** (*Build.*). A load which is carried by structural member at a point other than the centroid of the section.

**eccentric pole** (*Elec. Eng.*). A pole on an electric machine in which the pole face is not concentric with the armature but has a greater air gap at one pole tip than at the other to assist in neutralizing the effect of armature reaction.

**eccentric sheave** (*Eng.*). The disk of an eccentric, often formed integral with the shaft.

**eccentric station** (*Surv.*). One not physically occupied during triangulation, etc., but serving as a fixation point.

**eccentric strap** (*Eng.*). A narrow split bearing, fitting on an eccentric sheave and bolted to the end of a valve rod etc.; corresponds to the 'big end' of a connecting-rod.

**eccentric throw-out** (*Eng.*). A device for engaging the back gear of a lathe. The back gear shaft runs in eccentric-bored bearings, which are related to bring the gears in and out of mesh with those on the mandrel. See **back gear**.

**echondroma** (*Med.*). A tumour composed of cartilage and growing from the surface of bone.

**echondrosis** (*Med.*). An abnormal outgrowth of the joint cartilage in chronic arthritis.

**ecchymosis** (*Med.*). A large discoloured patch due to extravasation of blood under the skin.

**Eccles-Jordan circuit** (*Electronics*). Original bistable multivibrator using two triodes or transistors. See **flip flop**.

**eccrine** (*Med.*). Said of a gland whose product is excreted from its cells.

**ecdemie** (*Zool.*). Foreign; not *indigenous* or *endemic*.

**ecdysis** (*Zool.*). The act of casting off the outer layers of the integument, as in *Arthropoda*.

**ECFA** (*Immun.*). **Eosinophil Chemotactic Factor of Anaphylaxis**. A peptide released from mast cells which causes eosinophils to move into the site from the bloodstream.

**Local accumulation of eosinophil granulocytes take place where type-I allergic reactions occur.**

**ECG** (*Med.*). Abbrev. for **ElectroCardiogram**. See **electrocardiograph**.

**echelon grating** (*Phys.*). A form of interferometer resembling a flight of glass steps, light travelling through the instrument in a direction parallel to the treads of the steps. The number of interfering beams is therefore equal to the number of steps. Owing to the large path difference,  $(\mu - 1)$ , where  $\mu$  is the thickness of a step and  $\mu$  is the index of refraction, the order of interference and therefore the resolving power are high, making the instrument suitable for studying the fine structure of spectral lines.

**echin**, **echino** (*Bot.*). Prefix meaning *spine*.

**echinococcosis** (*Vet.*). An infection of sheep, pigs and cattle, and sometimes man, by the intermediate hydatid stage of the tapeworm *Echinococcus granulosus*. The adult worm occurs in dogs and other carnivora.

**echinococcus** (*Zool.*). A bladderworm possessing a wall developed bladder containing daughter bladders, each with numerous scolices.

**echinus** (*Arch.*). An ornament in the shape of an egg carved on a moulding, etc.

**echinuloides** (*Zool.*). A phylum of sedentary marine worm-like animals, in which nearly all trace of metamorphism has been lost in the adult; the body is sac-shaped, and feeding is effected by an anterior non-retractile proboscis, bearing a ciliated groove leading to the mouth.

**echo** (*Acous.*). Received acoustic wave, distinct from a directly received wave, because it has travelled a greater distance due to reflection.

**echo** (*Comp.*). Data transmission in which data is returned to the point of origin for comparison with the original data.

**echo** (*Radar*). Return signal in radar, whether from wanted object, or from side or back lobe radiation.

**echo** (*Telecomm.*). The reception of a signal additional to, and later than, the desired signal; caused by reflection from hills, etc., or travel completely round the earth.

**echo box** (*Radar*). Adjustable test resonator of high Q for returning a signal to the receiver from the transmitter.

**echocardiography** (*Med.*). Examination of the structure and function of the heart using reflected pulsed ultrasound.

**echo chamber** (*Acous.*). Same as **reverberation chamber**.

**echo flutter** (*Radar*). A rapid sequence of reflected radar (or sound) pulses arising from one initial pulse.

**echographia** (*Med.*). Ability to copy writing, associated with inability to express ideas in writing, due to a lesion in the brain.

**echoic memory** (*Behav.*). Refers to the brief retention of auditory information, in an unprocessed or *echo* form; fades within 2-6 seconds. Cf. **iconic memory**.

**echolalia** (*Behav., Med.*). Aimless repetition of words heard without regard for their meaning, occurring in disease of the brain or in insanity; often seen in catatonic schizophrenia and autistic children.

**echolocation** (*Behav.*). Means of locating objects in conditions of poor visibility; involves the production of high frequency sounds, and the detection of their echoes.

**echopraxia, echopraxis** (*Med.*). Imitation by an insane person of postures or of movements of those near him; commonly present in the catatonic type of schizophrenia.

**echo ranging sonar** (*Acous.*). Determination of distance and direction of objects, such as submarines, by the reception of the reflection of a sound pulse under water. See **asdic**.

**echo sounding** (*Acous.*). Use of echoes of pressure waves sent down to the bottom of the sea and reflected, the delay between sending and receiving times giving a measure of the depth; used also to detect wrecks and shoals of fish.

**echo studio** (*Acous.*). An enclosure of long reverberation time, used for the artificial introduction of an adjustable degree of reverberation in the main channel of a broadcast programme.

**echo suppression** (*Telecomm.*). In telephone 2-way

**electric field** (*Phys.*). Region in which forces are exerted on any electric charge present.

**electric field strength** (*Phys.*). The strength of an electric field is measured by the force exerted on a unit charge at a given point. Expressed in volts/metre. Symbol  $E$ .

**electric flux** (*Phys.*). Surface integral of the electric field intensity normal to the surface. The electric flux is conceived as emanating from a positive charge and ending on a negative charge without loss. Symbol  $\Phi$ .

**electric flux density** (*Phys.*). See **displacement**.

**electric generator** (*Elec. Eng.*). See **generator**.

**electric harmonic analyser** (*Elec. Eng.*). An electrical device for determining the magnitude of the harmonics in the wave shape of an alternating current or voltage. Also known as **spectrum analyser**.

**electricity** (*Elec. Eng.*). The manifestation of a form of energy associated with static or dynamic electric charges.

**electricity meter** (*Elec. Eng.*). See **integrating meter**.

**electric lamp** (*Elec. Eng.*). A lamp in which an electric current is used as a source of energy for radiating light.

**electric-light ophthalmia** (*Med.*). See **photophthalmia**.

**electric locomotive** (*Elec. Eng.*). A locomotive in which the motive power is by electric motor, supplied either from batteries (battery locomotive), from a diesel engine/electrical generator set on the locomotive (diesel electric), from overhead contact wire or from a contact rail.

**electric machine** (*Elec. Eng.*). See **electric motor**, **electric generator**, **electrostatic generator**.

**electric moment** (*Elec. Eng.*). Product of the magnitude of either of 2 equal electric charges and the distance between their centres, with axis direction from the negative to the positive charge. See also **magnetic moment**.

**electric motor** (*Elec. Eng.*). Any device for converting electrical energy into mechanical torque; occasionally called an **electromotor**.

**electric organ** (*Zool.*). A mass of muscular or nervous tissue, modified for the production, storage, and discharge of electric energy; occurring in Fish.

**electric oscillations** (*Telecomm.*). Electric currents which periodically reverse their direction of flow, at a frequency determined by the constants of a resonant circuit. See also **continuous oscillations**, **electronic oscillations**.

**electric polarization** (*Elec. Eng.*). The dipole moment per unit volume of a dielectric.

**electric potential** (*Elec. Eng.*). That measured by the energy of a unit positive charge at a point, expressed relative to zero potential.

**electric propulsion** (*Space*). The use of electrostatic or electromagnetic fields to accelerate ions or plasma thereby producing propulsive thrust. See **ion propulsion**.

**electric resistance welded tube** (*Chem. Eng.*). Much used in heat exchangers, it is made continuously by forming accurately rolled strip over a mandrel and welding the edges electrically. Abbrev **ERW tube**.

**electric shielding** (*Elec. Eng.*). See **Faraday cage**.

**electric storm** (*Meteor.*). A meteorological disturbance in which the air becomes highly charged with static electricity.

**electroacoustics** (*Acous.*). The branch of technology dealing with the interchange of electric and acoustic energy, e.g. as in a transducer.

**electroanalysis** (*Chem.*). Electrodeposition of an element from an electrolysed solution. See **conductimetric analysis**, **polarography**, **potentiometer**, **voltmeter**.

**electroarteriograph** (*Med.*). Instrument for recording blood-flow rates.

**electrobrushing** (*Eng.*). See **electrolytic polishing**.

**electrocapillary effect** (*Chem.*). The decrease in interfacial tension, usually of mercury, caused by the mutual repulsion of adsorbed ions opposing the attractive force of interfacial tension. See also **capillary electrometer**, **critical double layer**.

**electrocapillary maximum** (*Chem.*). The potential at which a mercury surface in an electrolyte is charge-free and consequently has the maximum interfacial tension; about  $-0.28$  volts.

**electrocardiogram** (*Med.*). **ECG**. A record of the electrical activity of the heart.

**electrocardiography** (*Med.*). The study of electric currents produced in cardiac muscular activity.

**electrocataphoresis** (*Phys.*). See **electrophoresis**.

**electrocatheter** (*Med.*). See **electric cautery**.

**electrochemical, electrode potential series** (*Chem.*). A classification of redox half-reactions, written as equations, in order of decreasing reducing strength. It is the combination of any half reaction with the reverse of one further down the series will give a spontaneous reaction. For reference, the half reaction  $H^+ + e^- = H_2$  is taken as having an energy of zero.

**electrochemical equivalent** (*Phys.*). The mass of a substance deposited at the cathode of a voltameter per coulomb of electricity passing through it.

**electrochemical machining** (*Eng.*). Removing material from a metal by anodic dissolution in a bath in which an electrolyte is pumped rapidly through the gap between a shaped electrode and the stock. Abbrev **ECM**.

**electrochemistry** (*Chem.*). That branch of chemistry which deals with the electronic and electrical aspects of processes, usually, but not always, in a liquid phase.

**electrochronograph** (*Elec. Eng.*). The combination of an electrically driven clock and an electromagnet recorder recording short time intervals.

**electrocoagulation** (*Med.*). Coagulation of bodily tissues by high-frequency electric current.

**electroconvulsive therapy** (*Behav.*). A form of therapy in which an electric current is passed through the brain, killing in convulsive seizures, used primarily in the treatment of depression. Abbrev **ECT**.

produced by the passage of an electric current through the liquid to be heated.

**electrode characteristic** (*Elec. Eng.*). Graph relating current in electronic device to potential of one electrode, that of all others being maintained constant.

**electrode conductance** (*Elec. Eng.*). In-phase or real component of an electrode admittance.

**electrode current** (*Electronics*). The net current flowing in a valve (or tube) from an electrode into the surrounding space.

**electrode dark current** (*Electronics*). The current which flows in a camera tube or phototube when there is no radiation incident on the photocathode, given certain specified conditions of temperature and shielding from radiation. It limits the sensitivity of the device.

**electrode dissipation** (*Electronics*). Power released at an electrode, usually an anode, because of electron ion impact. In large valves the temperature is held down by radiating fins, graphiting to increase radiation, or by water- or oil-cooling.

**electrode efficiency** (*Elec. Eng.*). The ratio of the quantity of metal deposited in an electrolytic cell to the quantity which should theoretically be deposited according to Faraday's laws.

**electrode holder** (*Elec. Eng.*). In electric arc-welding, a device used for holding the electrode and leading the current to it.

**electrode impedance** (*Elec. Eng.*). Impedance (or its components) is the ratio of a small sinusoidal voltage on an electrode to the corresponding sinusoidal current; all other electrodes being maintained at constant potential.

**electrodeposition** (*Chem.*). Deposition electrolytically of a substance on an electrode, as in electroplating or electroforming.

**electrode potential series** (*Chem.*). See **electrochemical series**.

**electrode resistance** (*Elec. Eng.*). Reciprocal of electrode conductance.

**electrodermal effect** (*Med.*). Change in skin resistance consequent upon emotional reactions.

**electrodialysis** (*Chem.*). Removal of electrolytes from a colloidal solution by an electric field between electrodes in pure water outside the two dialysing membranes between which is contained the colloidal solution.

**electrodissintegration** (*Phys.*). Disintegration of nucleus under electron bombardment.

**electrodissolution** (*Elec. Eng.*). Dissolving a substance from an electrode by electrolysis.

**electrodynamometer instrument** (*Elec. Eng.*). An electrical measuring instrument which depends for its action on the electromagnetic force between 2 or more current-carrying coils.

**electrodynamic loudspeaker** (*Acous.*). Loudspeaker, in which the radiating cone is driven by current in a coil which moves in a constant magnetic field.

**electrodynamic microphone** (*Acous.*). The inverse of an electrodynamic loudspeaker.

**electrodynamic wattmeter** (*Elec. Eng.*). One for low-



IN THE DRAWING

Please enter the accompanying one "Replacement Sheet" of drawings containing FIGS. 1 and 2. FIG. 2, in particular, shows circuit 10 comprising CPU 11 with push-pull speaker driver 12. The CPU (11) generates frequency modulated data signals "FM ECG 1" and "FM ECG 2," as well as pseudo random sequence "PRS" signals having the frequency bands as illustrated in FIG. 1, and as explained in Applicants' Specification at Page 2, lines 15-18.

Further, resistor R1 of push-pull speaker driver 12 limits the current from the output of the CPU (11), while the PRS signal is also applied to the speaker via resistor R2. The signals FM ECG 1 and PRS are mixed at the speaker, which allows for amplitude modulation of the FM ECG 1 - FM ECG 2 signal by the lower frequency PRS signal, as discussed in Applicants' Specification at Page 2, lines 19-22.

In the first Office Action, the Examiner objected to the drawings, pursuant to 37 C.F.R. §1.83(a), on the ground that every feature of the invention, as specified in the claims, must be shown. The Examiner has contended that "the content and/or the method of generating the ECG 1, ECG 2 and PRS signals and the push-pull speaker driver" to enable an understanding of the method of the signals mixed and modulated, must be shown or the feature cancelled from the claims.

Applicants respectfully submit that the originally-filed drawing figures (*i.e.*, FIGS. 1 and 2) which may have inadvertently been placed between pages of the International Search Report and overlooked by the Examiner. An additional copy of the drawing figures, as published with Applicants' corresponding P.C.T. Application is enclosed. Further enclosed is a "Replacement Sheet" for these P.C.T./W.I.P.O. published drawing figures, which removes the verbiage along the margins as found in the P.C.T. application and removes the circles round reference numerals 10, 11 and 12, which are generally viewed as objectionable in U.S. practice.

FIG. 2 shows that the CPU generates frequency modulated data signals ECG 1, ECG 2 and PRS, in addition to push-pull speaker driver (12), as required to be shown by the Examiner's drawing objection under 37 C.F.R. §1.83(a). This Rule of Practice does not require that a detailed illustration be provided for features, such as a CPU, which may be deemed to be "conventional" and "should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (e.g., a labeled rectangular box)."

Accordingly, Applicants respectfully submit that the originally-filed drawing figures, comprising FIGS. 1 and 2 (as further attached hereto), properly illustrate the features required to be shown by the Examiner's drawing objection under 37 C.F.R. §1.83(a), and the objection should be withdrawn.

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